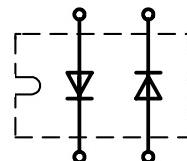


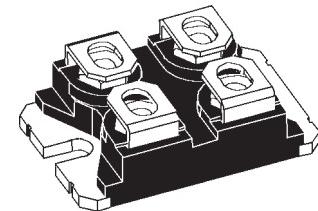
HiPerFRED™ Epitaxial Diode with soft recovery

I_{FAV} = 2x 60 A
V_{RRM} = 1200 V
t_{rr} = 40 ns

V _{RSM} V	V _{RRM} V	Type
1200	1200	DSEP 2x 60-12A



miniBLOC, SOT-227 B



Symbol	Conditions	Maximum Ratings	
I _{FRMS}		100	A
I _{FAVM}	T _C = 80°C; rectangular, d = 0.5	60	A
I _{FSM}	T _{VJ} = 45°C; t _p = 10 ms (50 Hz), sine	800	A
E _{AS}	T _{VJ} = 25°C; non-repetitive I _{AS} = 16 A; L = 180 µH	28	mJ
I _{AR}	V _A = 1.25·V _R typ.; f = 10 kHz; repetitive	1.6	A
T _{VJ}		-40...+150	°C
T _{VJM}		150	°C
T _{stg}		-40...+150	°C
P _{tot}	T _C = 25°C	200	W
V _{ISOL}	50/60 Hz, RMS I _{ISOL} ≤ 1 mA	2500	V~
M _d	mounting torque (M4) terminal connection torque (M4)	1.1-1.5/9-13 1.1-1.5/9-13	Nm/lb.in. Nm/lb.in.
Weight	typical	30	g

Symbol	Conditions	Characteristic Values	
		typ.	max.
I _R ①	T _{VJ} = 25°C V _R = V _{RRM} T _{VJ} = 150°C V _R = V _{RRM}	1 4	mA mA
V _F ②	I _F = 60 A; T _{VJ} = 125°C T _{VJ} = 25°C	1.70 2.42	V V
R _{thJC} R _{thCH}		0.1	K/W K/W
t _{rr}	I _F = 1 A; -di/dt = 400 A/µs; V _R = 30 V; T _{VJ} = 25°C	40	ns
I _{RM}	V _R = 100 V; I _F = 200 A; -di _F /dt = 100 A/µs T _{VJ} = 100°C	8	A

Pulse test: ① Pulse Width = 5 ms, Duty Cycle < 2.0 %
 ② Pulse Width = 300 µs, Duty Cycle < 2.0 %

Data according to IEC 60747 and per diode unless otherwise specified

Features

- International standard package miniBLOC
- Isolation voltage 2500 V~
- UL registered E 72873
- 2 independent FRED in 1 package
- Planar passivated chips
- Very short recovery time
- Extremely low switching losses
- Low I_{RM}-values
- Soft recovery behaviour

Applications

- Antiparallel diode for high frequency switching devices
- Antisaturation diode
- Snubber diode
- Free wheeling diode in converters and motor control circuits
- Rectifiers in switch mode power supplies (SMPS)
- Inductive heating
- Uninterruptible power supplies (UPS)
- Ultrasonic cleaners and welders

Advantages

- Avalanche voltage rated for reliable operation
- Soft reverse recovery for low EMI/RFI
- Low I_{RM} reduces:
 - Power dissipation within the diode
 - Turn-on loss in the commuting switch

Dimensions see Outlines.pdf

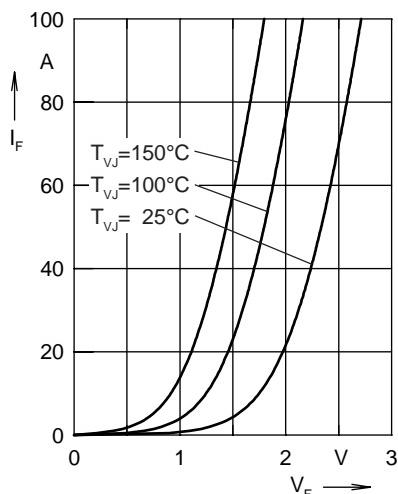


Fig. 1 Forward current I_F versus V_F

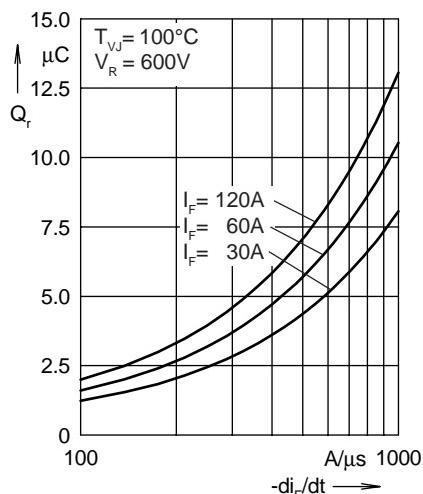


Fig. 2 Reverse recovery charge Q_r versus $-di_F/dt$

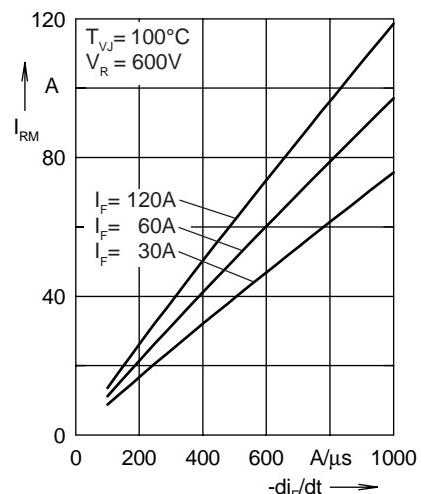


Fig. 3 Peak reverse current I_{RM} versus $-di_F/dt$

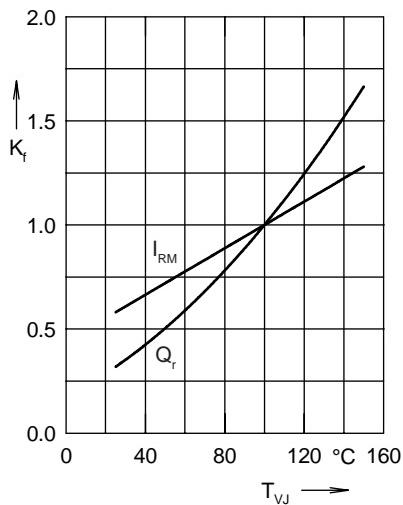


Fig. 4 Dynamic parameters Q_r , I_{RM} versus T_{VJ}

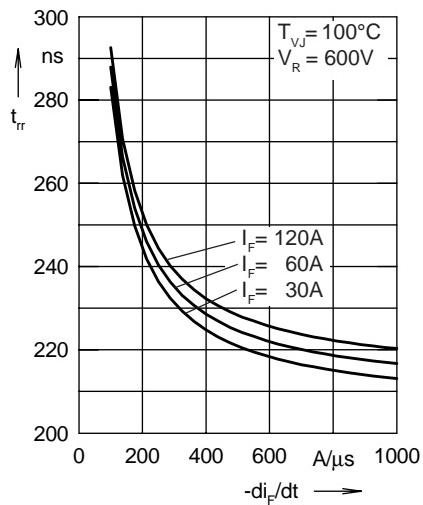


Fig. 5 Recovery time t_{rr} versus $-di_F/dt$

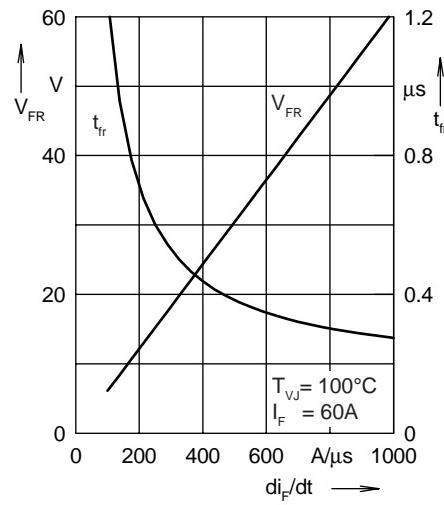


Fig. 6 Peak forward voltage V_{FR} and t_{rr} versus di_F/dt

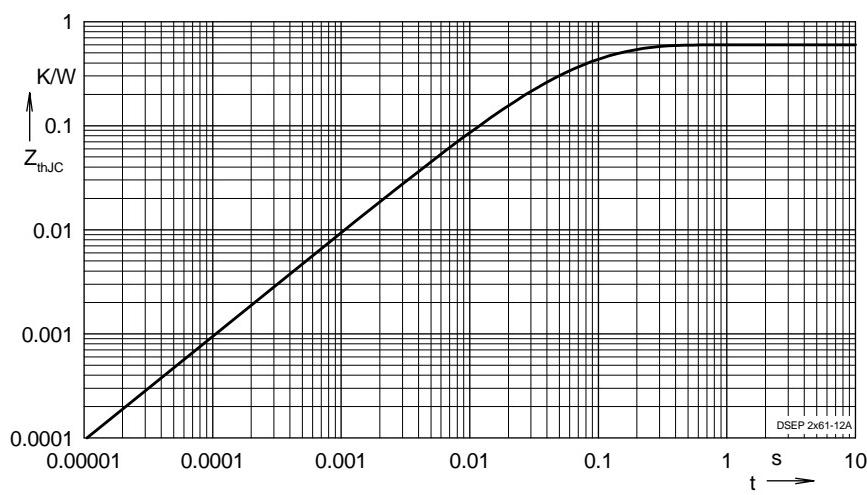


Fig. 7 Transient thermal resistance junction to case

NOTE: Fig. 2 to Fig. 6 shows typical values

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Constants for Z_{thJC} calculation:

i	R_{thi} (K/W)	t_i (s)
1	0.212	0.0055
2	0.248	0.0092
3	0.063	0.0007
4	0.077	0.0391